

REMARKS/ARGUMENTS

Discussion/Interview with the Examiner

The Examiner clarified to the Applicants' representative Rabinathanth Dutta, Reg. No. 51,010, on April 24, 2008 that in the rejection of claim 2 (In item 22 on page 9 of the office action) the indication "column 11, lines 67; column lines 1-2" is intended to refer to "col. 11, line 67; and column 12, lines 1-2". Additionally, the Examiner said that he would review the rules on the requirements of a summary should the Applicants submit that a summary was optional. If the Examiner believes that further information on the discussion/interview needs to be made of record to comply with the requirements of 37 CFR 1.133, Applicants request the Examiner to identify such further information.

Specification

The Examiner objected to the Specification for not including a "Brief Summary of the Invention". Applicants note that these guidelines are suggested for the Applicant's use and are not requirements. Accordingly, Applicants request withdrawal of this objection to the Specification.

Applicants have amended paragraph 41 in accordance with the indications provided by the Examiner in the Office Action.

Applicants have amended page 4, lines 23 (included in paragraph 16) of the Specification to refer to reference numeral 220d rather than 220m.

Drawings

Applicants have amended page 4, lines 23 of the Specification (included in paragraph 16) to refer to reference numeral 220d that is present in the drawings rather than 220m that is absent in the drawings. As a result, the reference numerals in the drawings correspond to the specification. No amended drawings are necessary.

Claims are amended for expediting prosecution

In this Amendment, Applicants have amended and/or canceled certain claims. Applicants are not conceding that the subject matter encompassed by the prior to this Amendment is not

patentable over the art cited by the Examiner. The claims were amended and/or canceled in this Amendment solely to facilitate expeditious prosecution of the pending claims. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by claims as presented prior to this Amendment and additional claims in one or more continuing applications.

Claim Rejections under 35 U.S.C. 112

The Examiner has rejected claims 3 (The Examiner has mistyped 2 instead of 3 as is apparent from the reasons for the rejection provided by the Examiner and because claims 3, 11, 19, 23 have similar subject matter), 11, 19, 23 under 35 U.S.C. 112, second paragraph.

Applicants have amended claims 3, 11, 19, 23 to overcome the Examiner's rejection under 35 U.S.C. 112. Applicant submit that at least FIG. 6 of the Application provides support for the amendments made to claims 3, 11, 19, 33.

Claim Rejections under 35 U.S.C. 102 and 103

The Examiner has rejected claims 1, 7, 9, 15, 17, 21, 27 under 35 U.S.C. 102(e) as being anticipated by Kaniyar (US Pub. 2003/0187914). Claims 2-6, 8, 10-14, 16, 18-20, 22-26, 28 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kaniyar in view of Rogers (US 6,970,990). Applicants have amended independent claims 1, 9, 17, 21 with the requirements of dependent claims 2, 10, 18, 22 respectively and traverse the rejection of the claims.

Amended independent claims 1, 9, 17, 21

Amended claim 1 comprises:

determining a number of conflicting entries in a software redirection table having a first set of entries, wherein the first set of entries is capable of being mapped to a second set of entries of a hardware redirection table; and

mapping the first set of entries to the second set of entries, based on the number of conflicting entries in the software redirection table, wherein the conflicting entries are caused if at least two entries of the software redirection table that are capable of being mapped to one entry of the hardware redirection table indicate different receive queues, the method further comprising:

- (a) determining whether the first set of entries in the software redirection table has more members than the second set of entries in the hardware redirection table, wherein the number of conflicting entries are determined in response to determining that the first set of entries in the software redirection table has more members than the second set of entries in the hardware redirection table; and
- (b) indicating that packets associated with conflicting entries are to be directed to one receive queue, in response to determining that the number of conflicting entries is less than a threshold.

Applicants have amended independent claims 1, 9, 17, 21 with the requirements of dependent claims 2, 10, 18, 22 respectively, Claims 1, 9, 17, 21 had been rejected under 35 U.S.C. 103(a) as being unpatentable over Kaniyar in view of Rogers and applicants traverse the rejection of the claims.

In rejecting claim 2 whose requirements are now included in amended claim 1, the Examiner has indicated in page 9 (in item 22) of the office action that col. 11, line 67 and col. 12, lines 1-2, of the cited Rogers discloses the claim requirements of “determining whether the first set of entries in the software redirection table has more members than the second set of entries in the hardware redirection table, wherein the number of conflicting entries are determined in response to determining that the first set of entries in the software redirection table has more members than the second set of entries in the hardware redirection table”, and col. 7, lines 53-57 of the cited Rogers discloses the claim requirements of “determining that the number of conflicting entries is less than a threshold”. The term “conflict” in the amended independent claims has been changed to “conflicting entries”.

Applicants respectfully submit that col. 11, lines 67 and col. 12, lines 1-2 of the cited Rogers discusses that in FIG. 10 of the cited Rogers “the hash function includes the low 39 bits of the virtual segment identifier being XORed with the virtual page number to generate a hash value”, wherein “the lower 28 bits of the hash value are ANDed with a hash mask determined by the size of the hardware page table”. Applicant submit that the cited Rogers is discussing generation of a hash value and “AND”ing certain bits of the hash value with a hash mask, wherein the hash mask is determined by the size of a hardware page table. The claim requirements are different because the claims require “determining whether the first set of entries in the software redirection table has more members than the second set of entries in the hardware

redirection table, wherein the number of conflicting entries are determined in response to determining that the first set of entries in the software redirection table has more members than the second set of entries in the hardware redirection table”. Applicants respectfully submit that col. 11, line 67 and col. 12, lines 1-2 of the cited Rogers that determines that the hash mask is determined by the size of a hardware page table does not teach, disclose or suggest the claim requirements of “determining whether the first set of entries in the software redirection table has more members than the second set of entries in the hardware redirection table, wherein the number of conflicting entries are determined in response to determining that the first set of entries in the software redirection table has more members than the second set of entries in the hardware redirection table”.

Additionally, the Examiner has mentioned that col. 7, lines 53-57 of the cited Rogers discloses the claim requirements of “determining that the number of conflicting entries is less than a threshold”. Applicants respectfully submit that col. 7, lines 53-57 of the cited Rogers discusses that “the cost of recursive faults is handled by monitoring statistics of second order faults and promoting a first order metadata structure to be a second order (pinned page table entry) metadata structure if it exceeds a threshold of allowed faults.” Therefore the cited col. 7, lines 53-57 of the cited Rogers is discussing actions taken with respect to metadata structures in response to faults exceeding a threshold of allowed faults. The claims require determining that the number of conflicting entries is less than a threshold. The cited col. 7, lines 53-57 of the cited Rogers is discussing faults with respect to a threshold, and does not teach, disclose, or suggest the claim requirements of determining whether the number of conflicting entries is less than a threshold, because the “fault” of the cited Rogers appear to be “page faults” [see col. 7, lines 13-14 of the cited Rogers] which is different from the “conflicting entries” of the claim requirements. Applicants request the Examiner to note that the conflicting entries of the claim requirements are caused if at least two entries of the software redirection table that are capable of being mapped to one entry of the hardware redirection table indicate different receive queues (as required by the amended claims) and therefore the conflicting entries of the claim requirements are different from the faults of the cited Rogers.

Additionally, the cited Kaniyar (paragraphs 7, 8, 31, 33, 34, 41, 43, FIG. 3a,) appears to discuss how “the same process in a multiprocessor system performs receive-side scaling of all processing of all I/O tasks related to a particular connection (paragraph 22 of the cited Kaniyar),

wherein I/O tasks are partitioned for connections across processor in a multiprocessor system such that the connection state lives on a single processor for the lifetime of a network connection (paragraph 22 of the cited Kaniyar). Applicants respectfully submit that the amendments to the claims require that “the conflicting entries are caused if at least two entries of the software redirection table that are capable of being mapped to one entry of the hardware redirection table indicate different receive queues”. The Examiner had indicated that paragraph 31, lines 8-12 of the cited Kaniyar discloses conflicts (Page 9, item 21 of the Office action while rejecting the requirements of claim 2). Applicants respectfully submit that paragraph 31, lines 8-12 of the cited Kaniyar discusses that “at the same time the data packet is stored in the memory pool 343, a data packet descriptor including pointer information identifying the location of the data packet in memory pool 343 is stored in a memory array 345”. Therefore the cited Kaniyar in paragraph 31, lines 8-12 is discussing storage of data pointers in memory pools and pointer information, whereas the claims have the different requirements that the conflicting entries are caused if at least two entries of the software redirection table that are capable of being mapped to one entry of the hardware redirection table indicate different receive queues.

For the above reasons claims 1, 9, 17, 21 are patentable over the cited art.

Dependent claims 3-8, 11-16, 19-20, 23-28

Applicants submit that dependent claims 3-8, 11-16, 19-20, 23-28 are patentable over the cited art because they depend from independent claims 1, 9, 17, 21 which are patentable over the cited art for the reason discussed above, and because the combination of the limitations in the dependent claims 3-8, 11-16, 19-20, 23-28 and the base and intervening claims from which they depend provide further grounds of distinction over the cited art.

Amended dependent claims 3, 11, 19, 23

Amended dependent claim 3 depends on independent claim 1, wherein the one receive queue is a first receive queue, the method further comprising:

distributing those packets that are in the first receive queue among all processors of a plurality of processors for processing;

processing those packets that are in a second receive queue in a first processor of the plurality of processors; and

processing those packets that are in a third receive queue in a second processor of the plurality of processors.

Applicants submit that the new requirements of dependent claims 3, 11, 19, 23 are supported by at least FIG. 6 of the Application.

Paragraph 43, lines 21-28 of the cited Kaniyar that was used by the Examiner to reject original dependent claims 3, 11, 19, 23 (whose requirements differed to some extent from the amended dependent claims 3, 11, 19, 23; Examiner's reasons for the rejections may be found on page 10 in item 24 which rejects original claim 3) discusses that a scheduling processor is "selected in a round-robin method from amongst the available processors" and that after the scheduling processor is selected an interrupt is generated by a NIC to a the scheduling processor. Therefore, the cited Kaniyar discusses round-robin scheduling of processor and generation of interrupts to the scheduling processor, whereas the claim have the different requirements of:

distributing those packets that are in the first receive queue among all processors of a plurality of processors for processing;

processing those packets that are in a second receive queue in a first processor of the plurality of processors; and

processing those packets that are in a third receive queue in a second processor of the plurality of processors.

For the above reasons claim 3, 11, 19, 23 are patentable over the cited art.

Conclusion

For all the above reasons, Applicant submits that the pending claims are patentable. Should any additional fees be required beyond those paid, please charge Deposit Account No. 50-0585.

The attorney/agent of record invites the Examiner to contact him at (310) 557-2292 if the Examiner believes such contact would advance the prosecution of the case.

Dated: April 24, 2008

By: _____/Rabindranath Dutta/

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